State of Montana Enterprise Architecture Program

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October 21, 2008

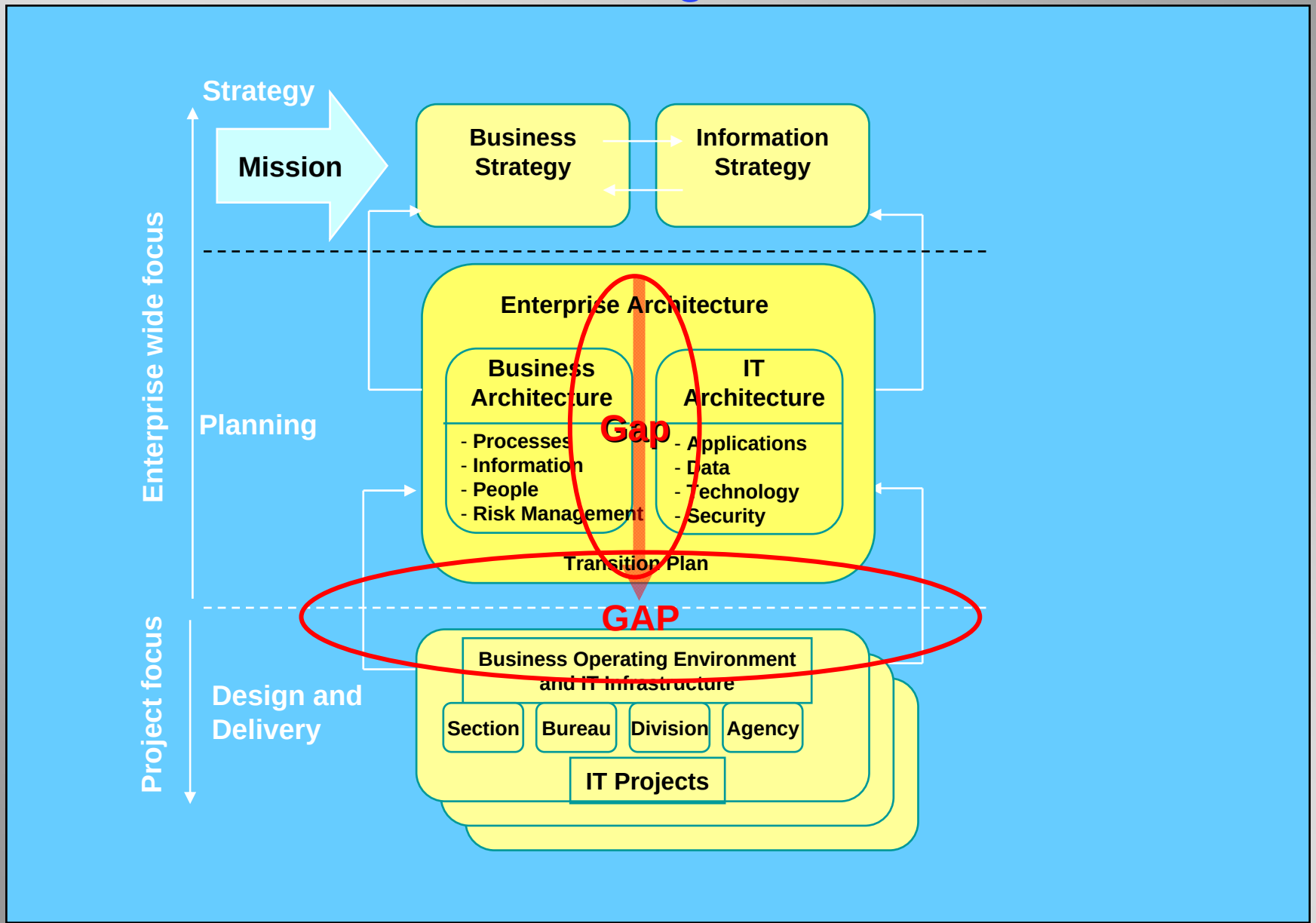
Review of Enterprise Architecture

What is Enterprise Architecture (EA)
Why do we need Enterprise Architecture
What is Service Oriented Architecture (SOA)
What does SOA look like
How will this work for the State of Montana?

What is Enterprise Architecture?

- Architecture is a framework to guide decisions.
- Enterprise architecture (EA) describes how an organization performs its work using business processes, information, people, technology and technical facilities.
- EA can serve as a reference point to manage the coordination of common business processes, information flows and supporting technology investments across all state departments
- EA is a key governance discipline leveraged within enterprise focused organizations providing oversight of information technology investments, standards and processes.
- EA provides Capital Planning, Portfolio Management, Investment Control, Risk Management and aligns Business and Information Technology strategies.

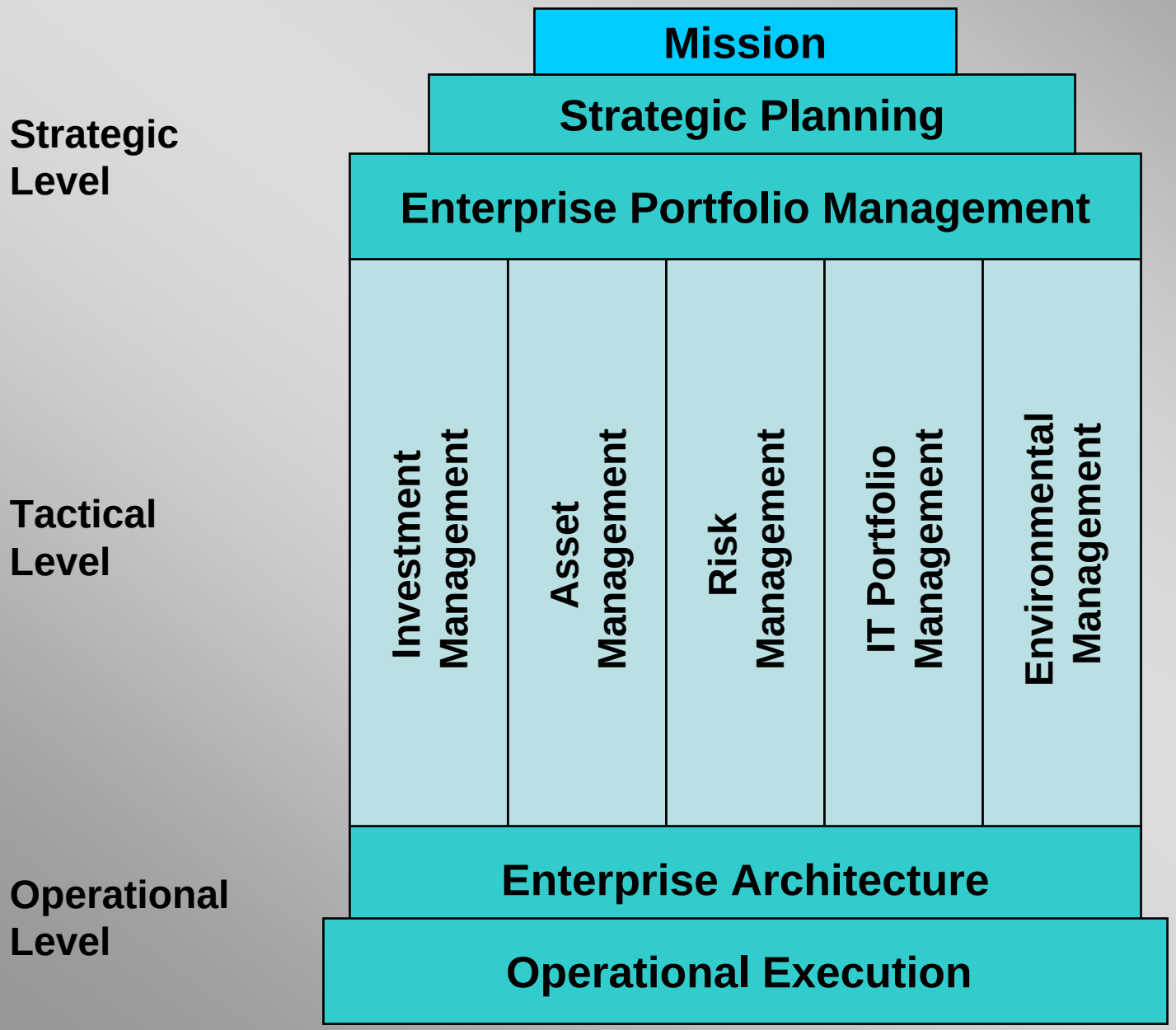
Enterprise Architecture Links
Business & IT Strategies and Processes

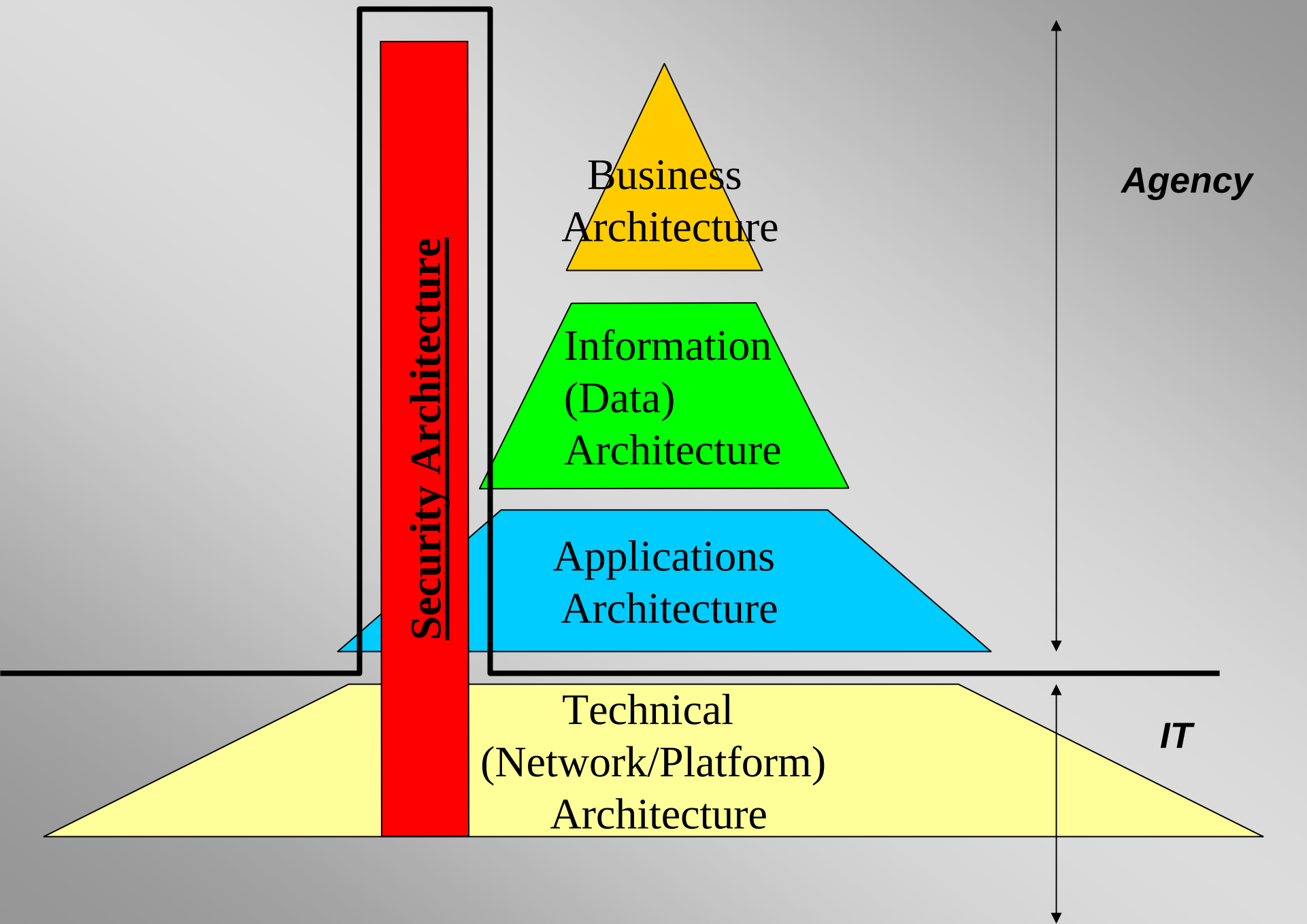


WHY--Enterprise Architecture

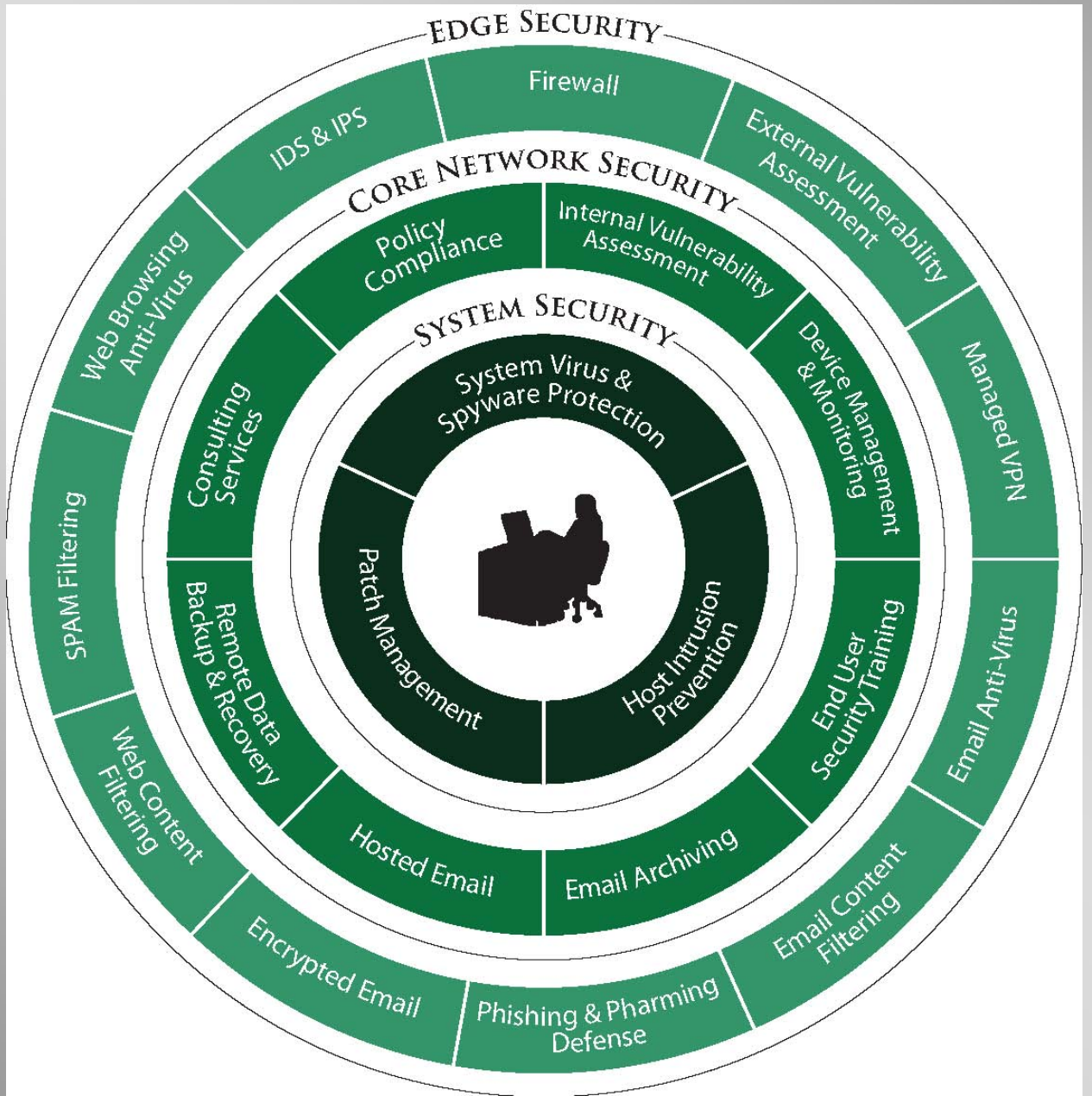
- **Supports Capital Planning and Investment Control**
- **Supports Portfolio Management & Strategic Planning**
- **Facilitates Data Sharing & Communities of Interest**
- **Provides Standards for hardware and software**
- **Supports Alignment of Business and IT strategies**
- **Supports Information Risk Management**
- **Federal Agency Mandate**
- **Supports Legislative intent of MITA, 45+ States implementing EA**
- **LEG, DPHHS & DOA implementing EA**
- **Provides Total Cost of Ownership (TCO)**
- **Eliminates re-investment in proprietary systems**
- **Minimizes unwarranted duplication**
- **Supports System Development Life Cycle (SDLC)**

Capital Planning, Investment Control, Portfolio Management

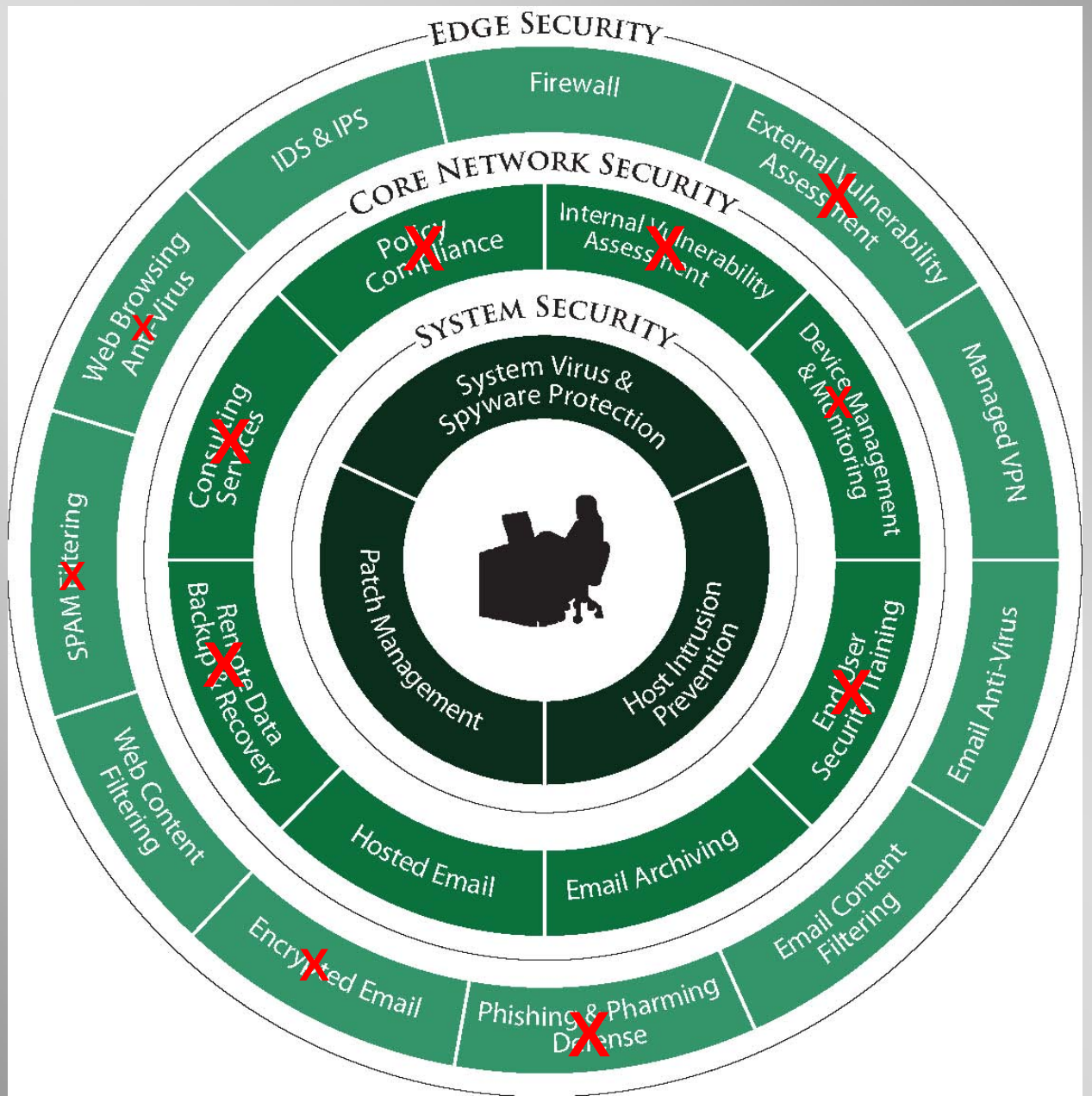



Security Architecture
Business Architecture
Information (Data) Architecture
Applications Architecture
Technical (Network/Platform) Architecture
Agency
IT

RISK MANAGEMENT



RISK MANAGEMENT



Exploiting the States existing security investment

In a recent national survey, the inadvertent exposure of an organizations confidential information was cited as the number one threat, above viruses, Trojans, and worms.

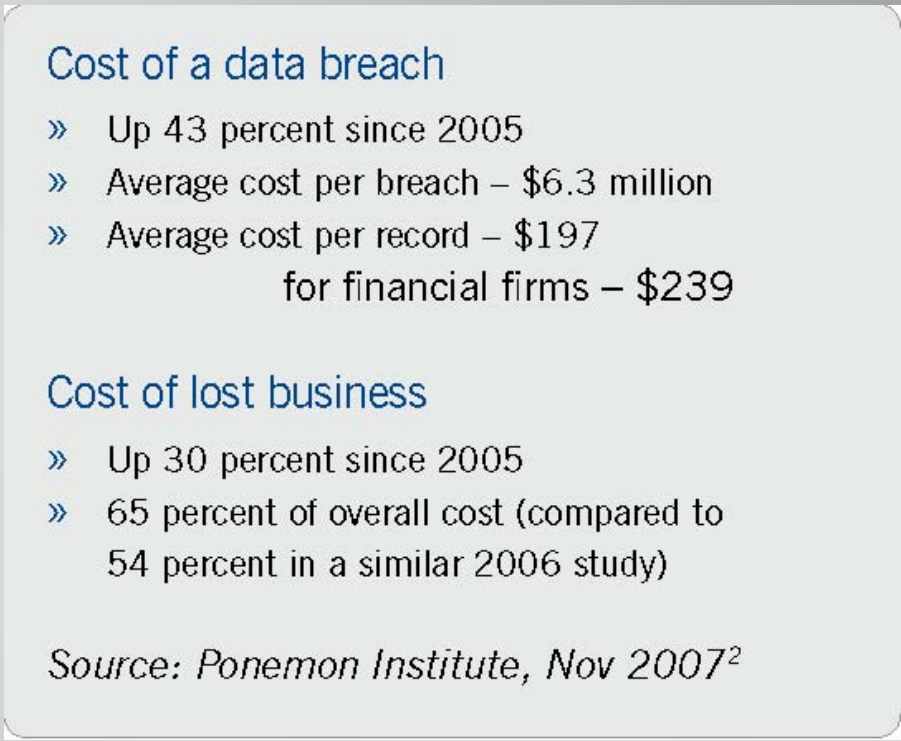
•Hackers stole 4.2 million credit and debit card numbers from Hannaford Bros, a US supermarket chain which has 165 grocery stores in the New England area. (Dec 2007 – Mar 2008)[3]

•Secret government documents on al Qaeda and Iraq were left on a commuter train in the UK. (Jun 2008)[4]

•Her Majesty's Revenue and Customs (HMRC) in the UK lost personal data – including dates of birth, National Insurance numbers and bank details – on 25 million people when two CDs disappeared in the internal mail. (Nov 2007)[5]

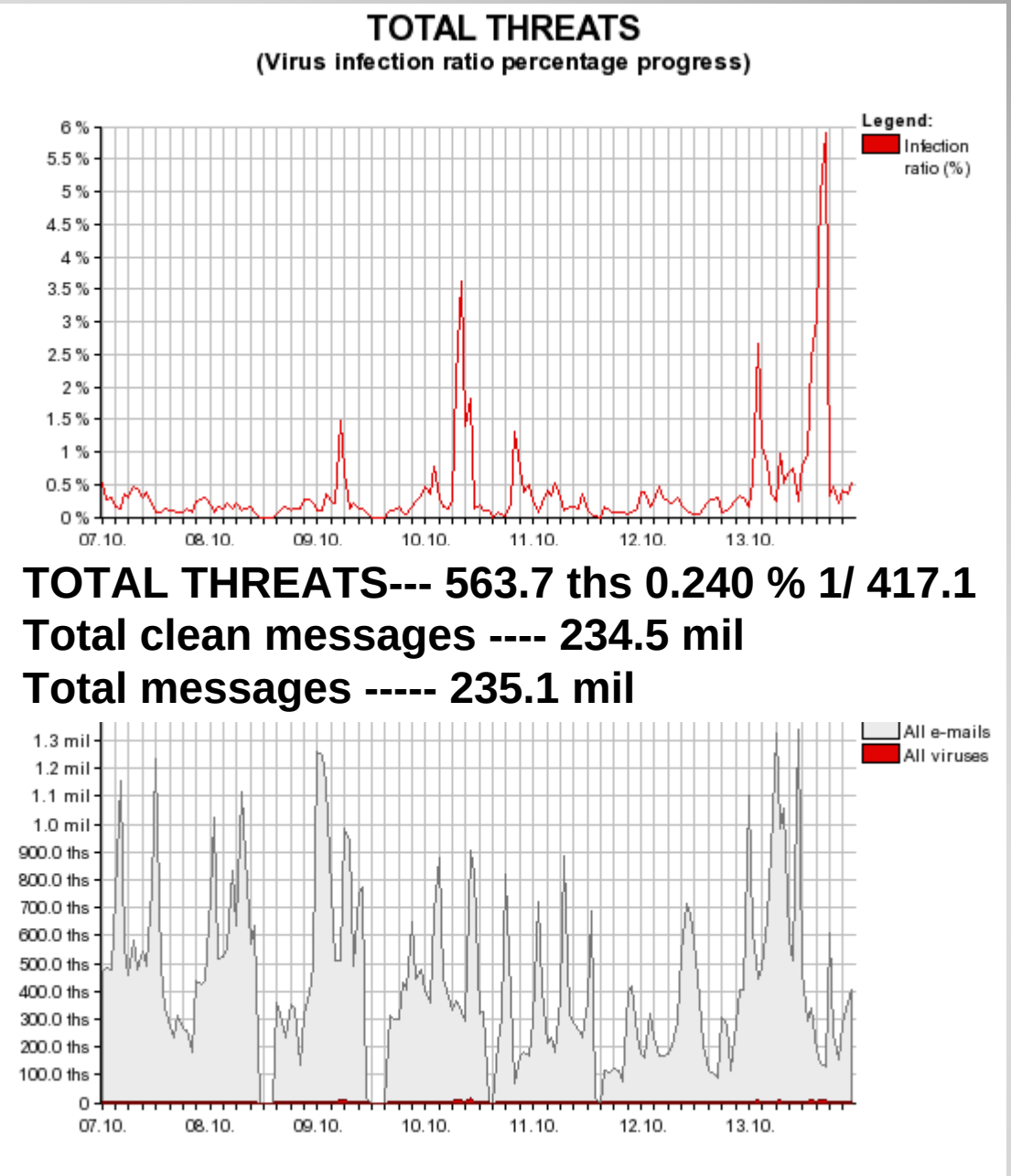
•An email containing names, positions, salaries, and social security numbers of 192 faculty and staff members was accidentally sent to Ohio State University Agricultural Technical Institute students. (May 2008)[6]

• E-Card attacks cost to the State of Montana an avg of $2800 per incident.



•Protecting our Investment
Car insurance = 5%
State Govt on Information Security = 1%

Email Infection Rates



TOTAL THREATS--- 563.7 ths 0.240 % 1/ 417.1

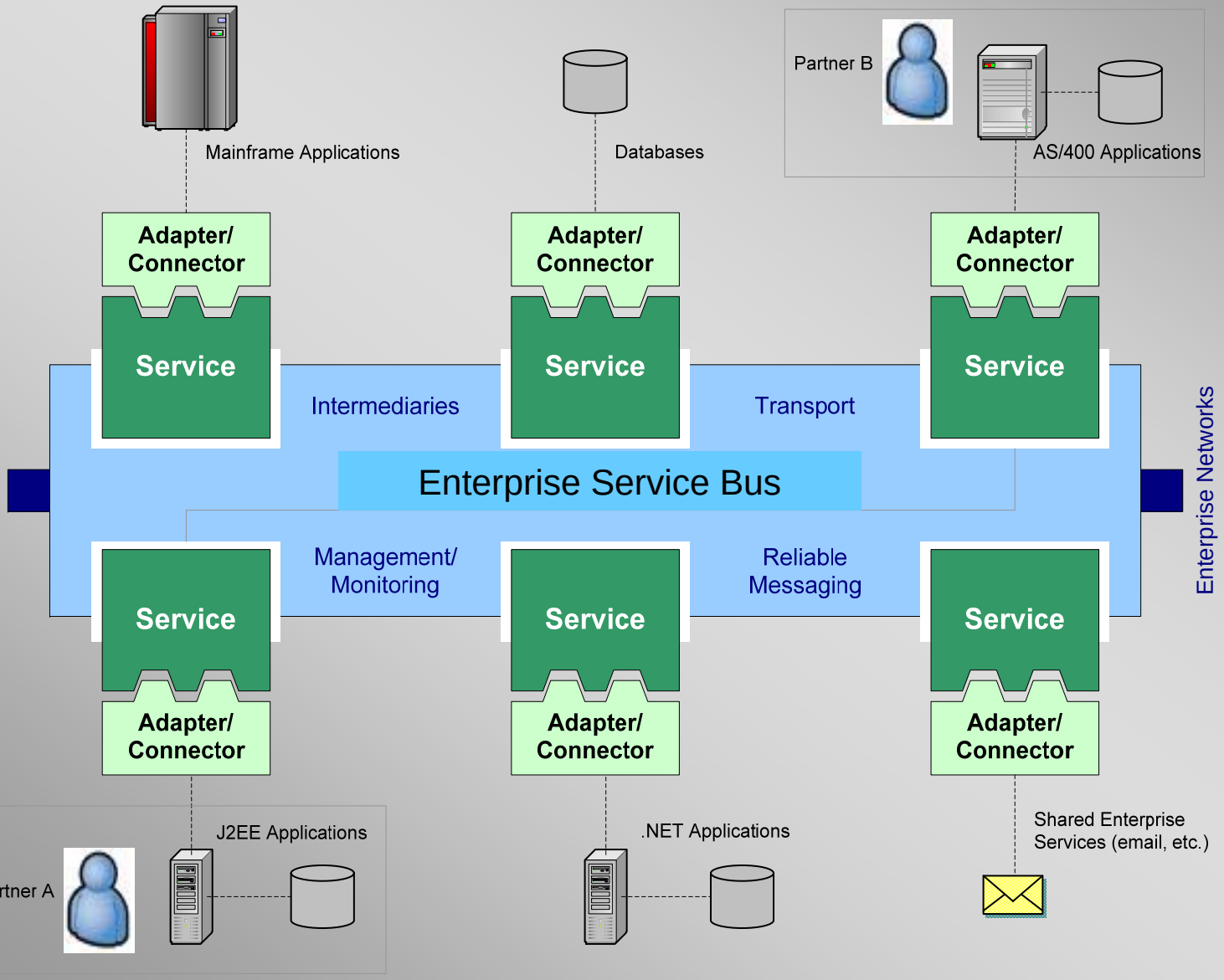
Total clean messages ---- 234.5 mil

Total messages ----- 235.1 mil

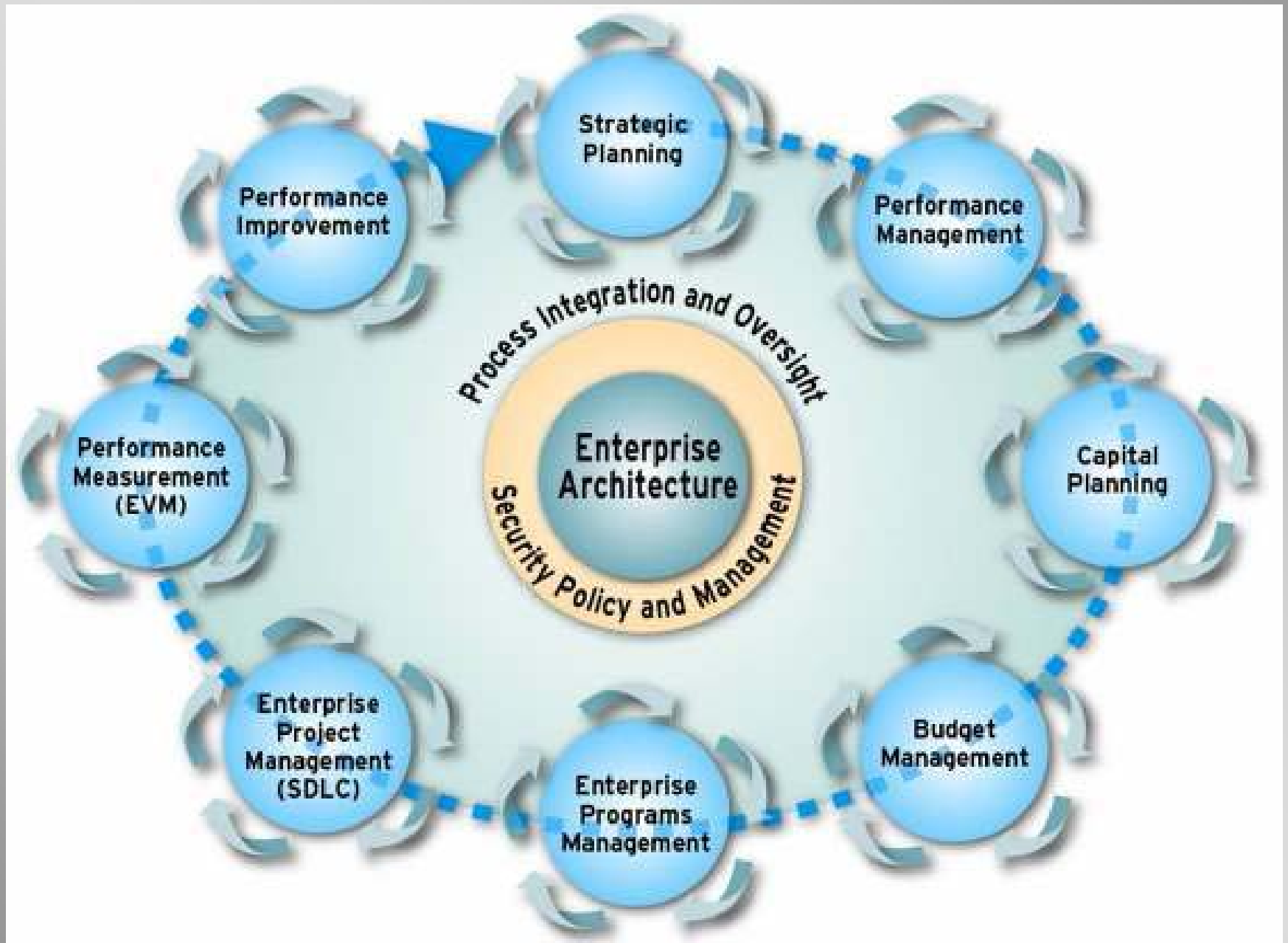
Service Oriented Architecture

- SOA is a style of information sharing architecture
- SOA increases the flexibility of IT resources
- Information sharing architecture guides decisions about integrating systems
- Increased agility to respond quickly to changes in business needs.
- Facilitates the reuse of technical assets across a larger enterprise
- Distinguishing Features:
  - Keeps implementations separate (services)
  - Autonomy: standardize on the “what”, specialize on the “how”
  - Formal, precise, but minimalist standards
  - Open (non-proprietary) standards
  - Share common services
  - Reuse components
  - System Development Life Cycle integration

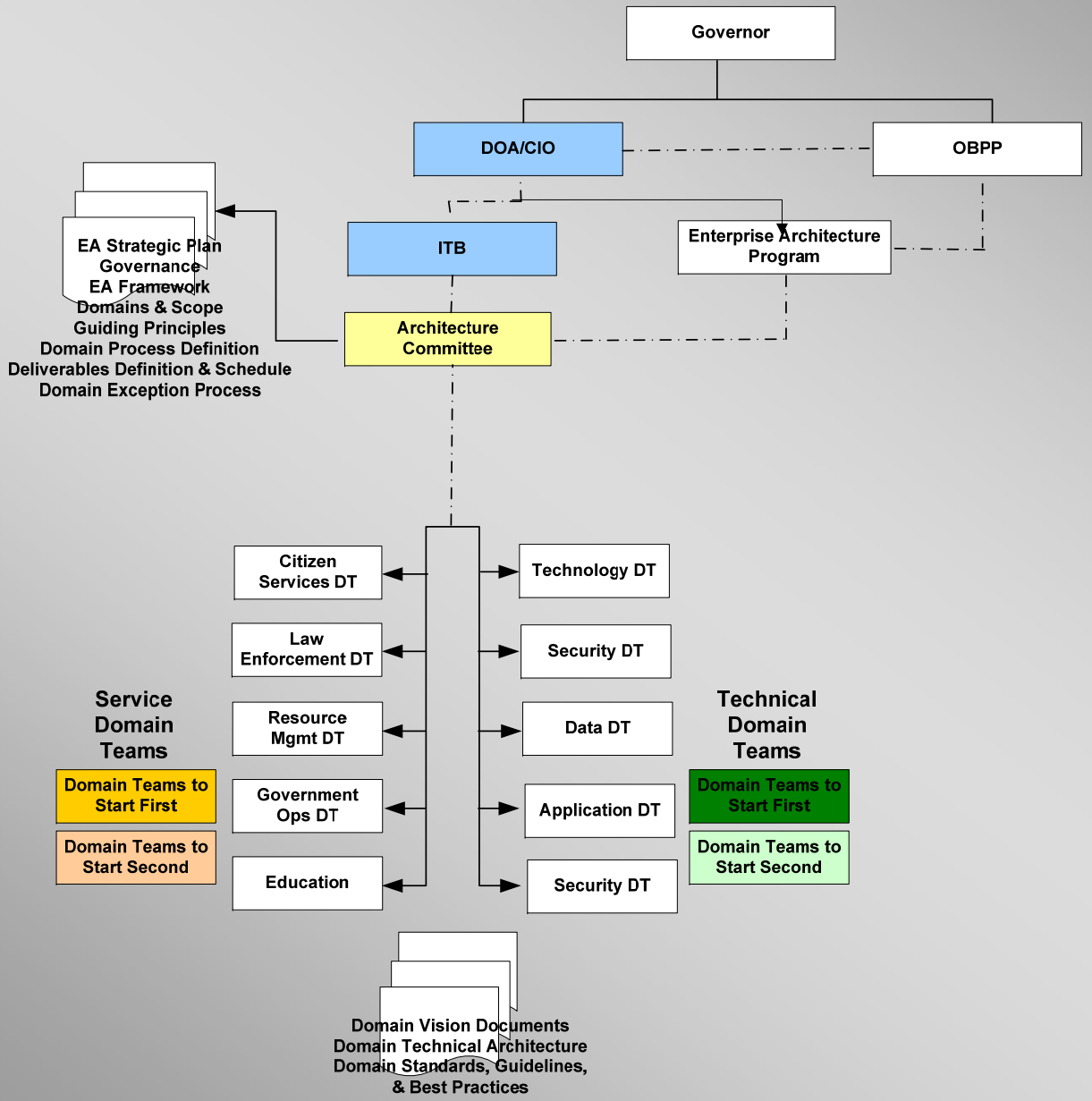
Enterprise Service Bus (ESB)

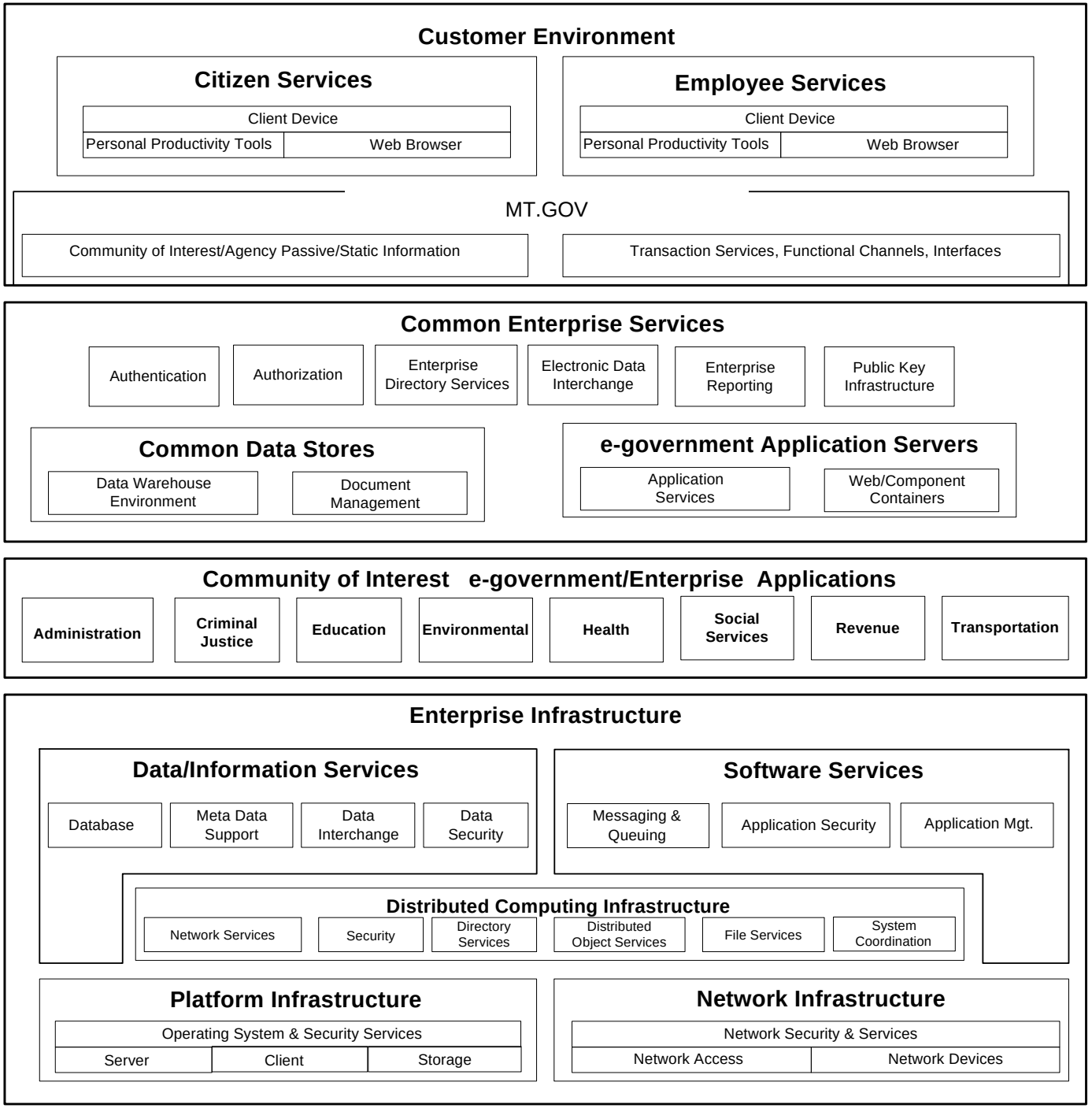


Enterprise Architecture: An Integrated Approach



Montana Enterprise Architecture Program Governance




Customer Environment
Citizen Services
Client Device
Personal Productivity Tools
Web Browser
Employee Services
Client Device
Personal Productivity Tools
Web Browser
MT.GOV
Community of Interest/Agency Passive/Static Information
Transaction Services, Functional Channels, Interfaces
Common Enterprise Services
Authentication
Authorization
Enterprise Directory Services
Electronic Data Interchange
Enterprise Reporting
Public Key Infrastructure
Common Data Stores
Data Warehouse Environment
Document Management
e-government Application Servers
Application Services
Web/Component Containers
Community of Interest e-government/Enterprise Applications
Administration
Criminal Justice
Education
Environmental
Health
Social Services
Revenue
Transportation
Enterprise Infrastructure
Data/Information Services
Database
Meta Data Support
Data Interchange
Data Security
Software Services
Messaging & Queuing
Application Security
Application Mgt.
Distributed Computing Infrastructure
Network Services
Security
Directory Services
Distributed Object Services
File Services
System Coordination
Platform Infrastructure
Operating System & Security Services
Server
Client
Storage
Network Infrastructure
Network Security & Services
Network Access
Network Devices

Path Forward

Implement Enterprise Architecture Program at State level?